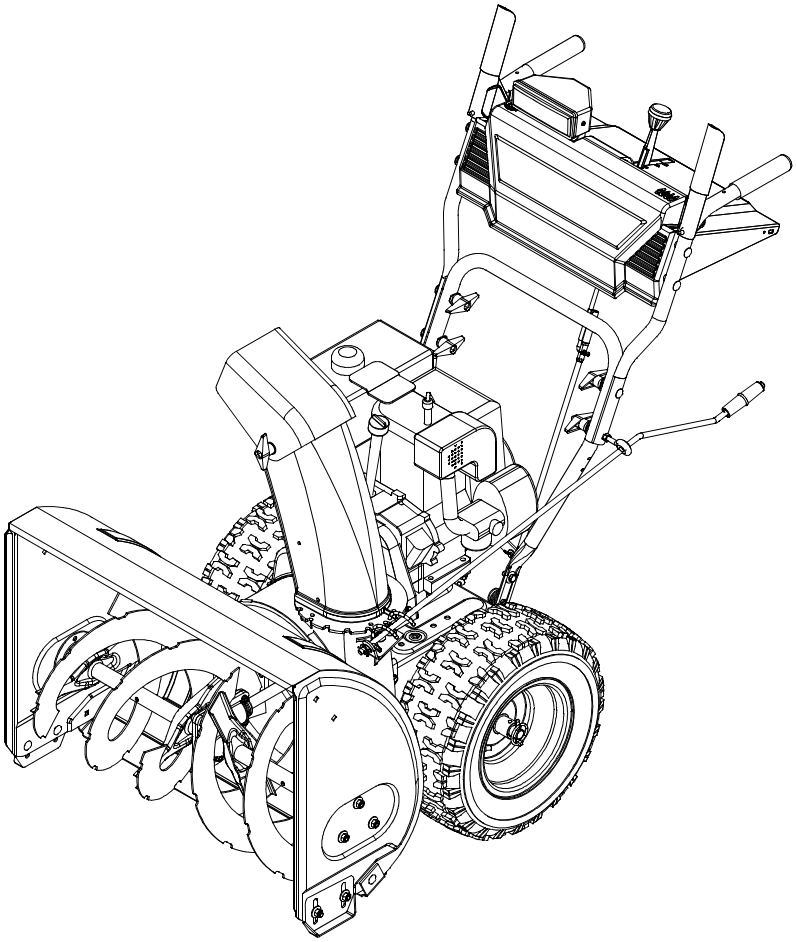
OPERATOR'S MANUAL



Snow Thrower

Model 640

IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022 Cleveland, Ohio 44136-9722.

MTD PRODUCTS INC. P.O. BOX 368022 CLEVELAND, OHIO 44136-9722

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FINDING MODEL NUMBER

This Operator's Manual is an important part of your new snow thrower. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.

Before you start assembling your new equipment, please locate the model plate on the equipment and copy the information from it in the space provided below. The information on the model plate is very important if you need help from our Customer Support Department or an authorized dealer.

- You can locate the model number by standing behind the unit in the operating position and looking down at the rear frame below the engine. A sample model plate is explained below. For future reference, please copy the model number and the serial number of the equipment in the space below.

(Model Number) (Serial Number)

MTD PRODUCTS INC
CLEVELAND, OHIO 44136

Copy the model number here: _____

Copy the serial number here: _____

CALLING CUSTOMER SUPPORT

If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, please call the Customer Support Department.

Call **1- (330) 220-4MTD** (4683) or **1- (800)-800-7310** to reach a Customer Support representative. Please have your unit's model number and serial number ready when you call. See previous section to locate this information. You will be asked to enter the serial number in order to process your call .

For more details about your unit, visit our website at www.mtdproducts.com

SECTION 1: IMPORTANT SAFE OPERATION PRACTICES

This symbol points out important safety instructions which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol—**heed its warning**.

WARNING: Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to State of California to cause cancer and birth defects or other reproductive harm.

DANGER: This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

Training

1. Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
3. Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.
4. Never allow adults to operate this machine without proper instruction.
5. Thrown objects can cause serious personal injury. Plan your snow throwing pattern to avoid discharge of material toward roads, bystanders and the like.
6. Keep bystanders, helpers, pets and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
7. Exercise caution to avoid slipping or falling, especially when operating in reverse.

Preparation

1. Thoroughly inspect the area where the equipment is to be used. Remove all door mats, newspapers, sleds, boards, wires and other foreign objects which could be tripped over or thrown by the auger/impeller.
2. Always wear safety glasses or eye shields during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
3. Do not operate without wearing adequate winter outer garments. Do not wear jewelry, long scarves or other loose clothing which could become entangled in moving parts. Wear footwear which will improve footing on slippery surfaces.
4. Use a grounded three wire extension cord and receptacle for all units with electric start engines.
5. Adjust collector housing height to clear gravel or crushed rock surfaces.
6. Disengage all clutch levers before starting the engine.
7. Never attempt to make any adjustments while engine is running, except where specifically recommended in the operator's manual.
8. Let engine and machine adjust to outdoor temperature before starting to clear snow.
9. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes which can ignite. Wash your skin and change clothes immediately.
    a. Use only an approved gasoline container.
    b. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
    c. Never fuel machine indoors.
    d. Never remove gas cap or add fuel while the engine is hot or running.
    e. Allow engine to cool at least two minutes before refueling.
    f. Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to provide space for fuel expansion.
    g. Replace gasoline cap and tighten securely.
    h. If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area. Wait 5 minutes before starting the engine.
    i. Never store the machine or fuel container inside where there is an open flame, spark or pilot light (e.g. furnace, water heater, space heater, clothes dryer etc.).
    j. Allow machine to cool at least 5 minutes before storing.

Operation

1. Do not put hands or feet near rotating parts, in the auger/impeller housing or discharge chute. Contact with the rotating parts can amputate hands and feet.
2. The auger/impeller clutch lever is a safety device. Never bypass its operation. Doing so, makes the machine unsafe and may cause personal injury.
3. The clutch levers must operate easily in both directions and automatically return to the disengaged position when released.

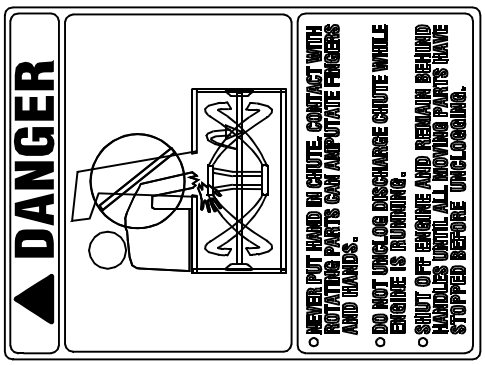
4. Never operate with a missing or damaged discharge chute. Keep all safety devices in place and working.
5. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
6. Do not operate machine while under the influence of alcohol or drugs.
7. Muffler and engine become hot and can cause a burn. Do not touch.
8. Exercise extreme caution when operating on or crossing gravel surfaces. Stay alert for hidden hazards or traffic.
9. Exercise caution when changing direction and while operating on slopes.
10. Plan your snow throwing pattern to avoid discharge towards windows, walls, cars etc. To avoid property damage or personal injury caused by a ricochet.
11. Never direct discharge at children, bystanders and pets or allow anyone in front of the machine.
12. Do not overload machine capacity by attempting to clear snow at too fast of a rate.
13. Never operate this machine without good visibility or light. Always be sure of your footing and keep a firm hold on the handles. Walk, never run.
14. Disengage power to the auger/impeller when transporting or not in use.
15. Never operate machine at high transport speeds on slippery surfaces. Look down and behind and use care when in reverse.
16. If the machine should start to vibrate abnormally, stop the engine, disconnect the spark plug and ground it against the engine. Inspect thoroughly for damage. Repair any damage before starting and operating.
17. Disengage all clutch levers and stop engine before you leave the operating position (behind the handles). Wait until the auger/impeller comes to a complete stop before unclogging the discharge chute, making any adjustments, or inspections.
18. Never put your hand in the discharge or collector openings. Always use a clearing tool to unclog the discharge opening.
19. Use only attachments and accessories approved by the manufacturer (e.g. wheel weights, tire chains, cabs etc.).
20. If situations occur which are not covered in this manual, use care and good judgment. Contact your dealer or telephone 1-800-800-7310 for assistance and the name of your nearest servicing dealer.

Maintenance and Storage

1. Never tamper with safety devices. Check their proper operation regularly.
2. Disengage all clutch levers and stop engine. Wait until the auger/impeller come to a complete stop. Disconnect the spark plug wire and ground against the engine to prevent unintended starting before cleaning, repairing, or inspecting.
3. Check bolts, and screws for proper tightness at frequent intervals to keep the machine in safe working condition. Also, visually inspect machine for any damage.
4. Do not change the engine governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
5. Snow thrower shave plates and skid shoes are subject to wear and damage. For your safety protection, frequently check all components and replace with original equipment manufacturer's (O.E.M.) parts only. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
6. Check clutch controls periodically to verify they engage and disengage properly and adjust, if necessary. Refer to the adjustment section in this operator's manual for instructions.
7. Maintain or replace safety and instruction labels, as necessary.
8. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.
9. Prior to storing, run machine a few minutes to clear snow from machine and prevent freeze up of auger/impeller.
10. Never store the machine or fuel container inside where there is an open flame, spark or pilot light such as a water heater, furnace ,clothes dryer etc.
11. Always refer to the operator's manual for proper instructions on off-season storage.

Your Responsibility:

Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine. The safety labels are given below for your reference.


DANGER
NEVER PUT HAND IN CHUTE. CONTACT WITH ROTATING PARTS CAN AMPUTATE FINGERS AND HANDS.
DO NOT UNCLOG DISCHARGE CHUTE WHILE ENGINE IS RUNNING.
SHUT OFF ENGINE AND REMAIN BEHIND HANDLES UNTIL ALL MOVING PARTS HAVE STOPPED BEFORE UNCLOGGING.

AVOID INJURY FROM ROTATING AUGER - KEEP HANDS, FEET AND CLOTHING AWAY.
DANGER
DANGER
1. KEEP AWAY FROM ROTATING IMPELLER AND AUGER. CONTACT WITH IMPELLER OR AUGER CAN AMPUTATE HANDS AND FEET.
2. DISENGAGE CLUTCH LEVERS, STOP ENGINE, AND REMAIN BEHIND HANDLES UNTIL ALL MOVING PARTS HAVE STOPPED BEFORE UNCLOGGING OR SERVICING MACHINE.
3. TO AVOID THROWN OBJECTS INJURIES, NEVER DIRECT DISCHARGE AT BYSTANDERS. USE EXTRA CAUTION WHEN OPERATING ON GRAVEL SURFACES.
4. READ OPERATOR'S MANUAL.

SECTION 2: ASSEMBLING YOUR SNOW THROWER

Unpacking

- Remove staples or break glue on the top flaps of the carton. Remove any loose parts included with unit (i.e., Operator's Manual, etc).
- Cut along corners and lay end of carton down flat. Remove packing material.
- Roll unit out of carton. Check carton thoroughly for loose parts before discarding.

Before Assembly

WARNING: Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

NOTE: *All references to right or left side of the snow thrower are determined from behind the unit in the operating position.*

Assembly Tips: For convenience in assembly, remove the chute from the carton and lay it on top of the engine. Do not unwrap the chute till you have installed the handle panel and the clutch cables.

Attaching the Handle

WARNING: Disconnect the spark plug wire and ground it against the engine to prevent unintended starting.

- Remove the two plastic wing nuts, two cupped washers, a carriage bolt on the right side and an eyebolt on the left side from the lower handle. See Figure 1.
- Raise upper handle assembly (in the direction shown in Figure 1) and align with lower handle.

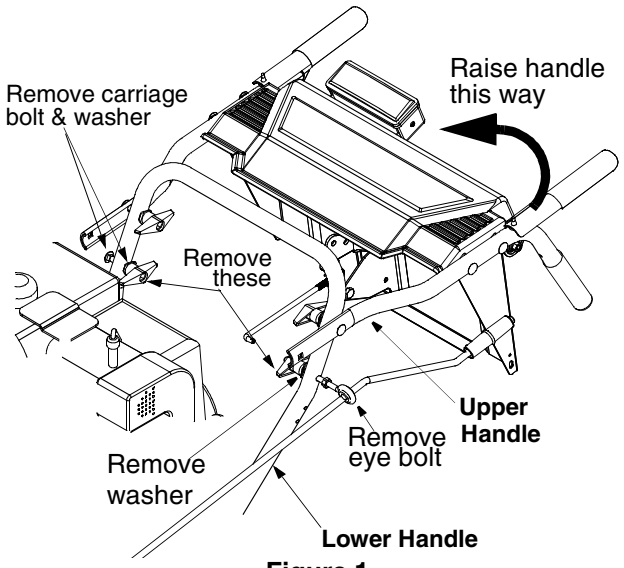


Figure 1

NOTE: *Make sure cables are set in the cable roller guides in the lower rear of the snow thrower .*

- Secure the upper handle to the lower handle with the hardware removed earlier.
- Adjust eyebolt on the chute directional control so the control rod does not contact the engine. Move the hex nut against the handle in order to adjust. Retighten the wing nut to secure the chute directional control in this position. See Figure 2.

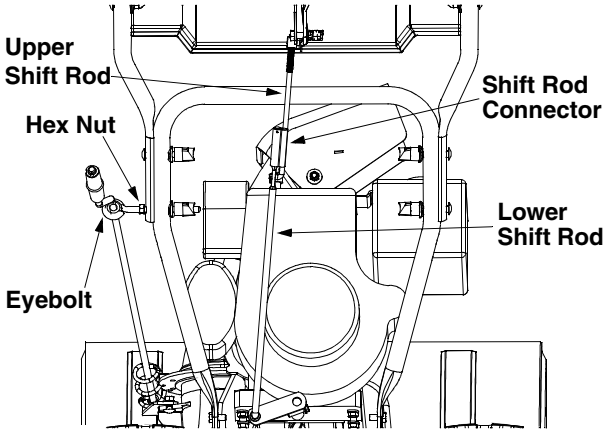


Figure 2

Assembling the Shift Rod

- Slide the shift rod connector down over the end of the lower shift rod. Tap the connector until it **locks** on the lower shift rod.

NOTE: *If the connector is not properly assembled, the shift rod will pivot and you will not be able to shift gears or change directions.*

Connecting Headlight

- Unwrap the headlight wire which is attached to the headlight, beneath the handle panel. Wind it around the right handle several times to remove excess slack in the wire. See Figure 3.
- Plug the wire from the headlight into the wire lead coming from the right side of the engine, underneath the fuel tank.

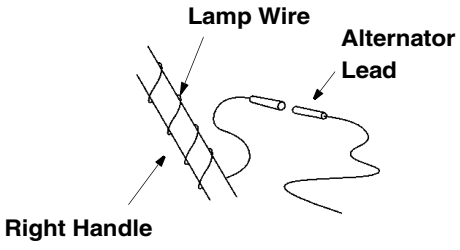


Figure 3

Final Adjustments

Skid Shoes

The space between the shave plate and the ground can be adjusted. For close snow removal, place skid shoes in the low position. Use middle or high position when area to be cleared is uneven.

- Adjust skid shoes by loosening the four hex nuts and carriage bolts and moving skid shoes to desired position. See Figure 4. Make certain the entire bottom surface of skid shoe is against the ground to avoid uneven wear on the skid shoes. Retighten nuts and bolts securely.

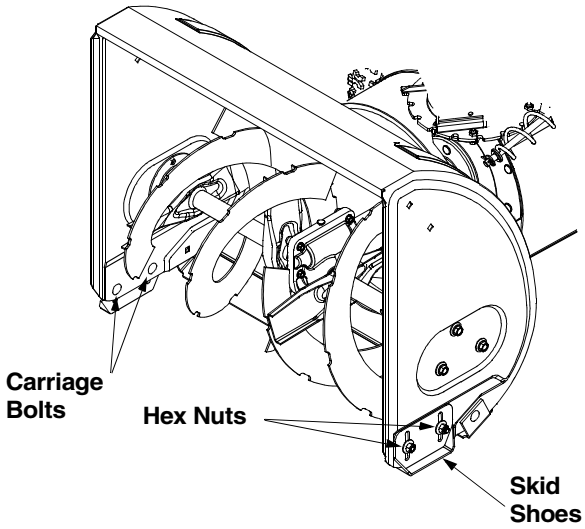


Figure 4

WARNING: Do not operate this snow thrower on gravel as loose gravel can be easily picked up and thrown by the auger causing injury to the operator and/or damage to the snow thrower.

Tire Pressure (Pneumatic Tires)

- The tires are over-inflated for shipping purposes. Check tire pressure and reduce to 15 to 20 psi.

NOTE: *If the tire pressure is not equal in both tires, the unit may pull to one side or the other.*

Auger Control

- To check the adjustment of the auger control, push forward on the left hand control, depressing the rubber bumper on end of control. There should be slack in the cable. Release the control. The cable should be straight. Make certain you can depress the auger control against the left handle completely.
- If necessary, loosen the hex jam nut and thread the cable in (for less slack) or out (for more slack) as necessary. Recheck adjustment. Tighten jam nut when correct adjustment is reached. See Figure 5.

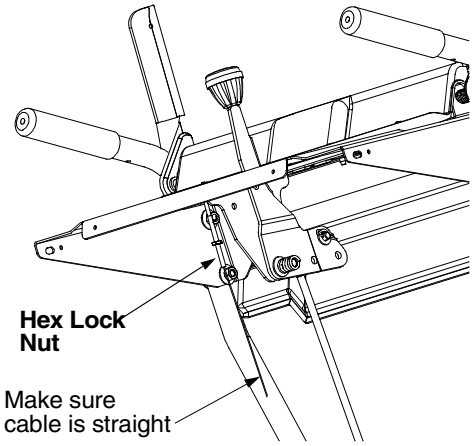


Figure 5

Traction Control and Shift Lever

- To check the adjustment of the traction control and shift lever, move the shift lever all the way forward to sixth (6) position. With the traction control released, push the snow thrower forward. The unit should move forward freely. Then engage the traction control grip. Wheels should stop turning.
- Now release the traction control grip, and push the unit again.
- Move the shift lever back to the fast reverse position, then all the way forward again. There should be no resistance in the shift lever, and wheels should keep turning.
- If you feel resistance when moving the shift lever or the wheels stop when they should not, loosen the jam nut on the traction control cable and unthread the cable one turn. If the wheels do not stop when you engage the traction control grip, loosen the jam nut on the traction control cable and thread the cable in one turn. Recheck the adjustment and repeat as necessary. Tighten the jam nut to secure the cable when correct adjustment is reached.

SECTION 3: KNOW YOUR SNOW THROWER

WARNING: Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.

Operating Controls

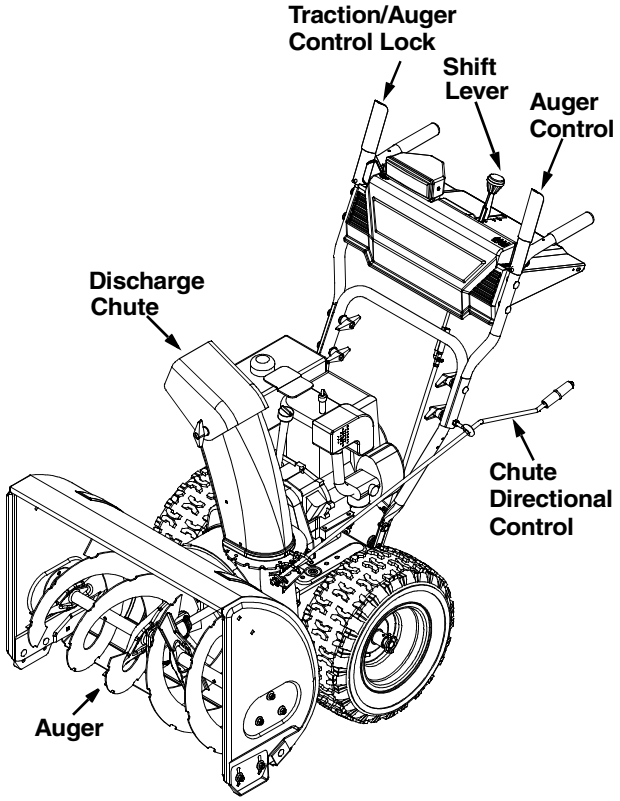


Figure 6

Shift Lever

The shift lever is located in the center of the handle panel. The shift lever may be moved into one of eight positions. Run engine with throttle in the fast position. Use the shift lever to determine ground speed.

Forward: There are six speeds. Position one (1) is the slowest. Position six (6) is the fastest.

Reverse: There are two reverse (R) speeds R1 and R2. The “R2” closest to the operator (all the way back) is the faster of the two.

Auger Control

The auger control is located on the left handle. Squeeze the control to engage the augers; release to stop the augers. Remember that traction control must also be released.

Traction / Auger Control Lock

The traction control is located on the right handle. Squeeze the control to engage the wheel drive. Release to stop.

This same control also locks the auger control so you can turn the chute directional control without interrupting the snow throwing process. If the auger control is engaged with the traction control engaged, the operator can release the auger control (on the left handle) and the augers will remain engaged. Release the traction control to stop both the augers and wheel drive (auger control must also be released).

Chute Directional Control

The chute directional control is located on left hand side of the snow thrower.To change the direction in which snow is thrown, turn chute directional control as follows:

- Crank clockwise to discharge to the left.
- Crank counterclockwise to discharge to the right.

Throttle Control

The throttle control is located on the engine. It regulates the speed of the engine. See Figure 7.

Ignition Key

The ignition key must be inserted in the switch before the unit will start. Remove the ignition key when snow thrower is not in use.

Fuel Shut-off Valve (If equipped)

The fuel shut-off valve, located under fuel tank, controls fuel flow from tank. See Figure 7.

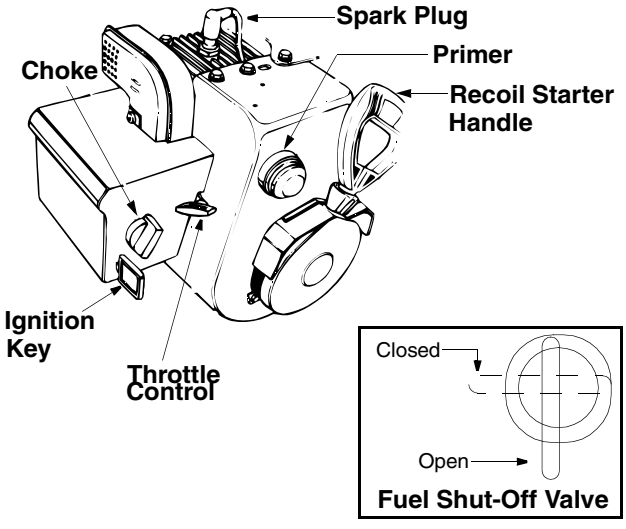


Figure 7

SECTION 4: OPERATING YOUR SNOW THROWER

Before Starting

WARNING: Read, understand, and follow all instructions and warnings on the machine and in this manual before operating.

- The spark plug wire was disconnected for safety. Attach spark plug wire to spark plug before starting.

Gas And Oil Fill-up

WARNING: Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel machine indoor or while the engine is hot or running. Extinguish cigarettes, cigars, pipes and other sources of ignition.

- A plastic **cup** was provided inside the fuel fill opening on the fuel tank. Remove and discard this cup before filling up the tank. Use the separate fuel tank cap to close after fill-up.

Starting Engine

- Attach spark plug wire to spark plug. Make certain the metal loop on end of the spark plug wire (inside the boot) is fastened securely over the metal tip on the spark plug. See Figure 8.

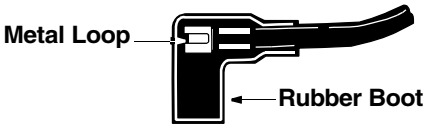


Figure 8

- Make sure the fuel shut-off valve, if so equipped, is in the OPEN (vertical) position.
- Make certain the auger and traction controls are in the disengaged (released) position.
- Move throttle control up to FAST position. Insert ignition key into slot. Be certain it snaps into place. Do not turn key. See Figure 7.

NOTE: *Engine will not start unless ignition key is inserted into ignition slot in carburetor cover. Do not turn ignition key.*

Recoil Starter:

- Rotate choke knob to FULL choke position (cold engine start).
- If engine is warm, place choke in OFF position instead of FULL.
- Push primer button three or four times for cold engine start.
- If engine is warm, push primer button once only.

NOTE: *Always cover vent hole in primer button when pushing. Additional priming may be necessary for first start if temperature is below 15 degrees Fahrenheit.*

- Grasp starter handle and pull rope out slowly, until it pulls slightly harder. Let rope rewind slowly.
- Pull starter handle rapidly. Do not allow handle to snap back. Allow it to rewind slowly while keeping a firm hold on the starter handle.
- Repeat step above until engine starts.
- As engine warms up and begins to operate evenly, rotate choke knob slowly to OFF position. If engine falters, return to FULL choke, then slowly move to OFF position.

Electric Starter

The electric starter is equipped with a grounded three-wire power cord and plug, and is designed to operate on 120 volt AC household current.

WARNING: The electric starter must be used with a properly grounded three-prong receptacle at all times to avoid possibility of electric shock. Follow all instructions carefully to operate the electric starter.

- Determine that your house wiring is a three-wire grounded system. Ask a licensed electrician if you are not certain.
- **If your home wiring system is not a three-wire grounded system,** do not use this electric starter under any conditions.
- **If your home electrical system is grounded,** but a three-hole receptacle is not available, one should be installed by a licensed electrician before using the electric starter.
- **If you have a grounded three-prong receptacle,** proceed as follows.
- Rotate choke knob to OFF position.
- Connect power cord to switch box on engine. Plug the other end of power cord into a three-prong 120-volt, grounded, AC receptacle.
- Push starter button to crank engine. As you crank the engine, move choke knob to FULL choke position.
- When engine starts, release starter button, and move choke gradually to OFF. If engine falters, move choke immediately to FULL and then gradually to OFF.
- When disconnecting the power cord, always unplug from the three-prong receptacle first, and then from the snow thrower.

To Stop Engine

- To stop engine, remove the ignition key. Do not turn key. Disconnect the spark plug wire from the spark plug to prevent accidental starting while equipment is unattended.

To prevent starter freeze-up:

- Run engine for a few minutes before stopping to help dry off any moisture on the engine.
- **Electric Starter:** Connect power cord to switch box on engine, then to 120 volt AC receptacle. With the engine running, push starter button and spin the starter for several seconds. The unusual sound made by spinning the starter will not harm engine or starter. Disconnect the power cord from receptacle first, and then from switch box.
- **Recoil Starter:** With engine running, pull starter rope with a rapid, continuous full arm stroke three or four times. Pulling the starter rope will produce a loud clattering sound, which is not harmful to the engine or starter.
- Wipe all snow and moisture from the carburetor cover in the area of the control levers. Also, move control levers back and forth several times. Leave throttle control lever in the STOP or OFF position. Leave choke control in the FULL choke position.
- Remove ignition key and disconnect spark plug wire. Do not turn key.

IMPORTANT: Do not lose ignition key. Keep it in a safe place. Engine will not start without the ignition key.

To Engage Drive

- With the engine running near top speed, move shift lever into one of the five FORWARD positions or two REVERSE positions. Select a speed appropriate for the snow conditions that exist. Use the slower speeds until you are familiar with the operation of the snow thrower.
- Squeeze the auger control and the augers will turn. Release it and the augers will stop.
- Squeeze traction control and the snow thrower will move. Release it and unit will stop. Never move shift lever without releasing traction control.

To Engage Augers

- To engage augers and start throwing snow, squeeze the auger control against the left handle. Release to stop the augers.

Tire Chains (Optional Equipment)

- Tire chains should be used whenever extra traction is needed. If your unit is not equipped with tire chains, you may purchase them.

Operating Tips

NOTE: *Allow the engine to warm up for a few minutes as the engine will not develop full power until it reaches operating temperature.*

WARNING: The muffler, engine and their surrounding areas become hot and can cause a burn. Do not touch.

- Discharge snow downwind whenever possible. Slightly overlap each previous path.
- Set the skid shoes 1/4" below the scraper bar for normal usage. The skid shoes may be adjusted upward for hard-packed snow. Adjust downward when using on gravel or crushed rock.
- Avoid possible starter freeze-up. Clean the snow thrower thoroughly after each use.

SECTION 5: MAKING ADJUSTMENTS

WARNING: NEVER attempt to make any adjustments while the engine is running, except where specified in the operator's manual.

Chute Assembly

The distance snow is thrown can be adjusted by changing the angle of the chute assembly. Refer to Chute Tilt Control on page 7.

Skid Shoe

The space between shave plate and ground can be adjusted by raising or lowering the skid shoes. Refer to Skid Shoe Adjustment on page 12.

Traction Control

Refer to Final Adjustments on page 6 to adjust traction control. If you are want to check further for correct adjustment, proceed as follows:

WARNING: Drain the gasoline out of snow thrower engine, place a piece of plastic film under the gas cap to avoid spillage before beginning the job.

- Tip the snow thrower forward, allowing it to rest on the auger housing.
- Remove the frame cover underneath the snow thrower by removing six self-tapping screws.

- With the traction control released, there must be clearance between the friction wheel and the drive plate in all positions of the shift lever.
- With traction control engaged, the friction wheel must contact the drive plate. See Figure 9.

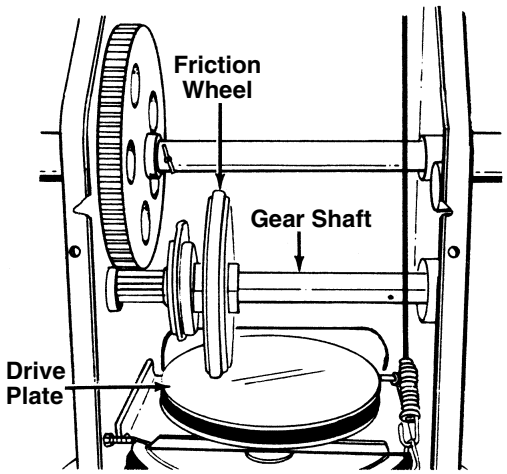


Figure 9

If adjustment is necessary:

- Loosen the jam nut on the traction drive cable and thread the cable in or out as necessary.
- Retighten the jam nut to secure the cable when correct adjustment is reached.
- Reassemble the frame cover.

NOTE: *If you placed plastic film under the gas cap, be certain to remove it before operating the snow thrower.*

Auger Control

Refer to details on page 6 to adjust the auger control.

Shift Rod

To adjust the shift rod, proceed as follows.

- Remove hairpin clip and slide shift rod connector up to separate upper and lower shift rod. See Figure 10.
- Place shift lever in sixth (6) position or fastest forward speed.
- Rotate shift arm assembly counter clockwise as far as it will go.
- Thread the upper shift rod on the ferrule to align upper shift rod elbow with lower shift rod hole.
- Insert cotter pin and slide shift rod connector down. Tap to secure the connector into place.

IMPORTANT: Check for correct adjustment of the shift lever rod as instructed on page 6, before operating the snow thrower.

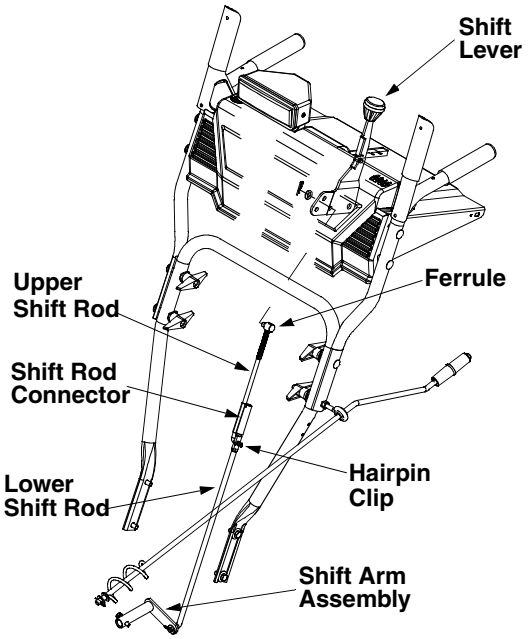


Figure 10

Drive Wheels

The wheels may be adjusted for two different methods of operation. The adjustment is made by placing the click pins in one of two different holes on the right side of the unit. See Figure 11.

One Wheel Driving: Insert the click pin only through the outside hole of the axle (not the rim) on the right side of the snow thrower. This position gives power drive to the left wheel only, making the unit easier to maneuver.

Both Wheels Driving: Insert the click pin through the hole in the hub of the rim and the inside hole on the snow thrower's right axle. This position is good for heavy snow as there is power drive in both wheels.

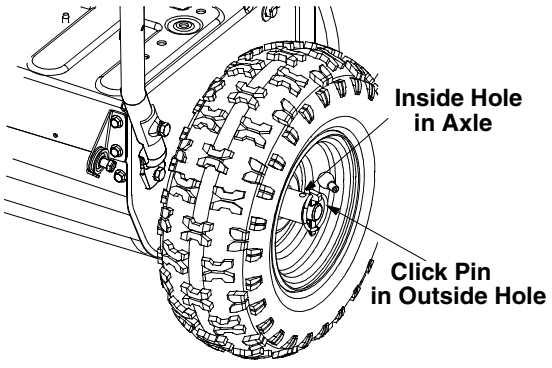


Figure 11

IMPORTANT: Never operate the snow thrower with the click pin inserted through both the rim and the outside hole in the axle. Doing so can result in serious damage to the drive system.

SECTION 6: MAINTAINING YOUR SNOW THROWER

WARNING: Before servicing, repairing, or inspecting, disengage all clutch levers and stop engine. Wait until all moving parts have come to a complete stop. Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

Lubrication

Chute Directional Control

- The worm gear on the chute directional control should be greased with multipurpose automotive grease.

Wheels

- Oil or spray lubricant into bearings at least once a season. Pull the klick pins and remove wheels, clean and coat axles with a multipurpose automotive grease. See Figure 12.

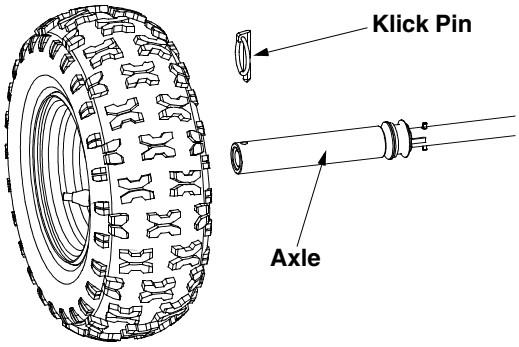


Figure 12

Gear Shaft

- Lubricate the gear shaft with a good all-weather multi-purpose light grease at least once a season or after every 25 hours of operation.

IMPORTANT: Keep all grease and oil off friction wheel and drive plate.

Drive and Shifting Mechanism

- Remove rear cover. Oil any chains, sprockets, gears, bearings, shafts, and shifting mechanism at least once a season. Use engine oil or a spray lubricant. Avoid getting oil on rubber friction wheel and aluminum drive plate.

Gear Case

- The worm gear case has been filled with grease at the factory. If disassembled for repairs, lubricate with 2 ounces of shell grease, part no. 737-0168.

IMPORTANT: Do not overfill the gear case. Damage to the seals could result. Be sure the vent plug is free of grease in order to relieve pressure.

Engine

- Refer to the engine manual for maintenance procedures and instructions.

WARNING: When following instructions in the engine manual for draining oil, be sure to protect frame to avoid oil dripping onto transmission parts.

Follow the precautions listed under "Stopping Engine" to prevent possible freeze-up.

Auger Shaft

- At least once a season, remove shear bolts on auger shaft. Oil or spray lubricant inside shaft. Also lubricate the auger bearings at least once a season. See Figure 13.

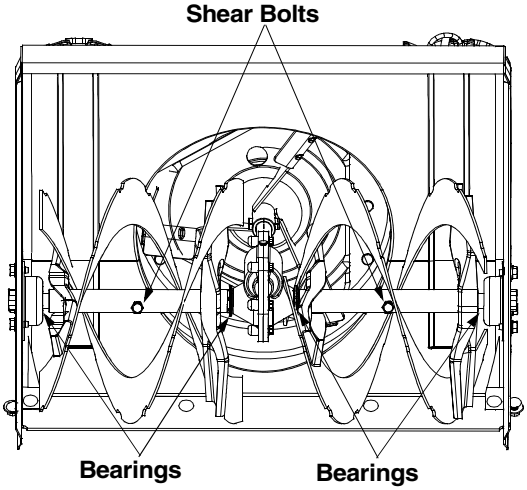


Figure 13

SECTION 7: SERVICING YOUR SNOW THROWER

WARNING: Before servicing, repairing, or inspecting, disengage all clutch levers and stop engine. Wait until all moving parts have come to a complete stop. Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

Augers

The augers are secured to the spiral shaft with two shear bolts and hex lock nuts. If the snow thrower hits a foreign object or ice jam, hex bolts will shear.

- If the augers will not turn, check to see if the bolts have sheared. Two replacement shear bolts and hex lock nuts have been provided with the snow thrower. For future use, order part number 710-0890A (shear bolt 5/16-18 x 1.5") and 712-0429 (hex lock nut 5/16-18).

Shave Plate and Skid Shoes

The shave plate and skid shoes on the bottom of the snow thrower are subject to wear. They should be checked periodically and replaced when necessary.

- To remove skid shoes, remove the four carriage bolts, bell washers and hex nuts which attach them to the snow thrower. Reassemble new skid shoes with the four carriage bolts, bell washers (cupped side goes against skid shoes) and hex nuts. Make certain the skid shoes are adjusted to be level.
- To remove shave plate, remove carriage bolts, bell washers and hex nuts which attach it to the snow thrower housing.
- Reassemble new shave plate, making sure heads of the carriage bolts are to the inside of the housing. Tighten securely.

Belt Replacement

WARNING: Disconnect the spark plug wire from the spark plug and ground.

Auger Belts

NOTE: *It is necessary to remove both belts in order to change either one. If changing just one belt, be certain to check the condition of the other belt.*

- Remove the plastic belt cover in front of the engine by removing the two self-tapping screws. See Figure 14.
- Drain the gasoline from the snow thrower, or place a piece of plastic under the gas cap.
- Tip the snow thrower up and forward so that it rests on the housing.
- Remove six self-tapping screws from the frame cover underneath the snow thrower. See Figure 14 for the location of the hardware.

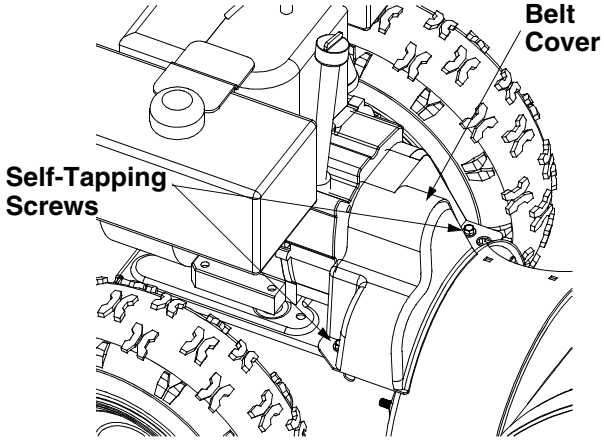


Figure 14

- Roll the front and rear auger belts off the engine pulley. See Figure 15.

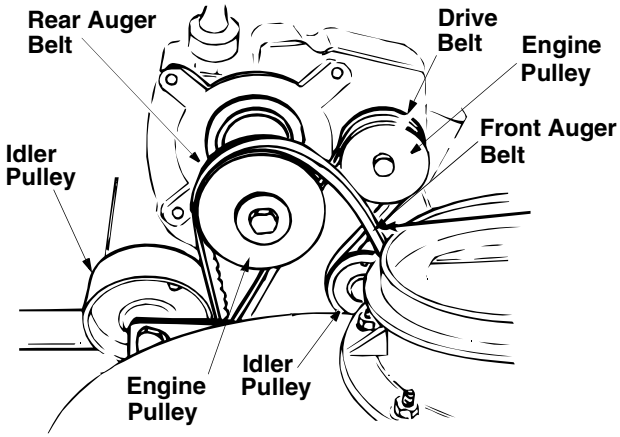


Figure 15

- Unhook the idler spring from the hex bolt on the auger housing. See Figure 16.
- Back out the stop bolt to allow belts to slip between the bolt and the auger pulley. See Figure 17.

NOTE: *It may be necessary to loosen the six hex nuts that fasten the frame to the auger housing.*

- Lift the rear auger belt from the auger pulley, and slip belt between the support bracket and the auger pulley. See Figure 16. Repeat this step for front auger belt (except models 600/610E).
- Replace both auger drive belts by following instructions in reverse order.

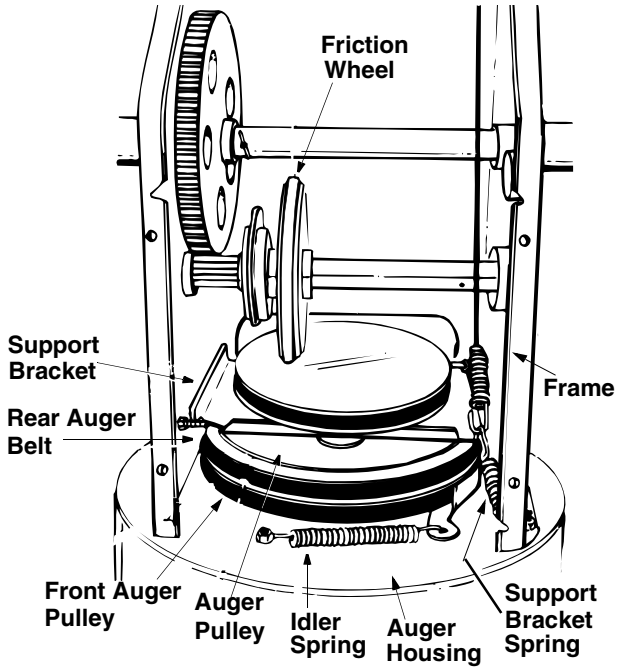


Figure 16

Drive Belt

- Follow steps 1 through 4 of previous instructions.
- Pull idler pulley up, and lift belt off engine pulley and friction wheel disc. See Figure 15.
- Back out the stop bolt until the support bracket rests on the auger pulley. See Figure 17.
- Slip belt between friction wheel and friction wheel disc. Remove and replace belt. Reassemble following the instructions in reverse order.

NOTE: *The support bracket must rest on the stop bolt after the new belt has been assembled. See Figure 25.*

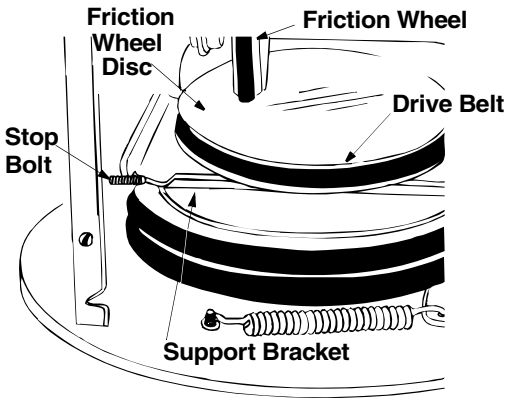


Figure 17

Changing Friction Wheel Rubber

The rubber on the friction wheel is subject to wear and should be checked after 25 hours of operation, and periodically thereafter. Replace the friction wheel rubber if any signs of wear or cracking are found.

- Drain the gasoline from the snow thrower, or place a piece of plastic under the gas cap.
- Tip the snow thrower up and forward, so that it rests on the housing. See Figure 18.

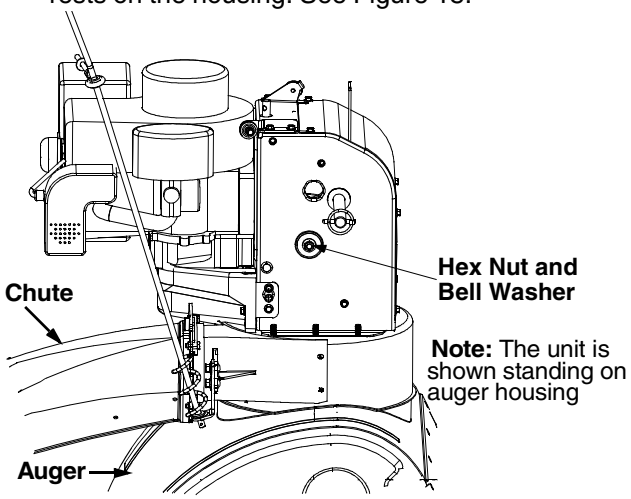


Figure 18

- Remove six self-tapping screws from the frame cover underneath the snow thrower.
- Remove the klick pins which secure the wheels, and remove the wheels from the axle.
- Using a wrench to hold the shaft, loosen, but do not completely remove, the hex nut and bell washer on left end of gear shaft. See Figure 18.
- Lightly tap the hex nut to dislodge the ball bearing from the right side of frame. Remove the hex nut and bell washer from left end of shaft.
- Slide the gear shaft to the right and slide the friction wheel assembly from the shaft.
- Remove the six screws from the friction wheel assembly (three from each side). Remove the friction wheel rubber from between the friction wheel plate. See Figure 19.

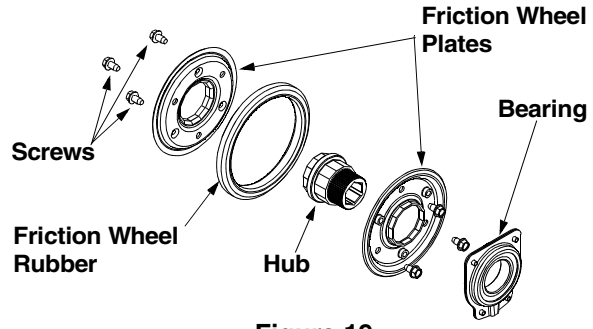


Figure 19

- Reassemble new friction wheel rubber to the friction wheel assembly, tightening the six screws in rotation and with equal force.
- Position the friction wheel assembly up onto the pin of the shift rod assembly, and slide the shaft through the assembly. Reassemble the wheels and the frame cover.

SECTION 8: OFF-SEASON STORAGE

WARNING: Never store engine with fuel in tank indoors or in enclosed, poorly ventilated areas where fuel fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, or other gas appliance.

- If unit is to be stored over 30 days, prepare the engine for storage following instructions in the engine manual.
- Remove all dirt from exterior of engine and equipment.
- Follow lubrication recommendations on page 11.

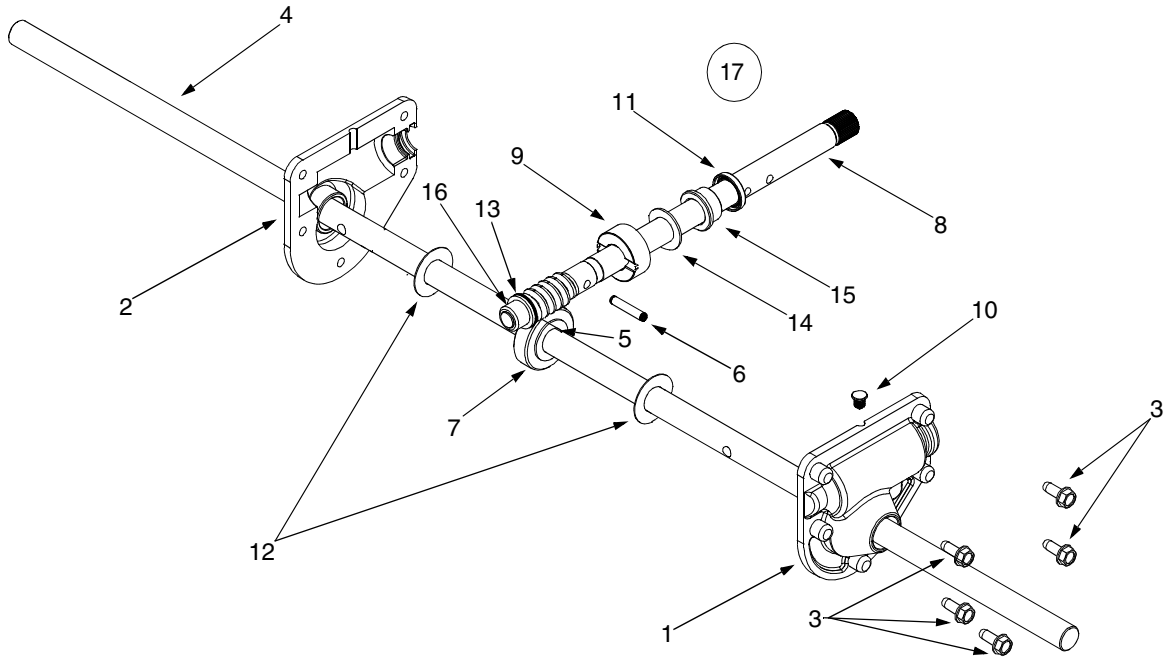
NOTE: *When storing any type of power equipment in an poorly ventilated or metal storage shed, care should be taken to rustproof the equipment, especially springs, cables and all moving parts.*

SECTION 9: TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	Fuel tank empty, or stale fuel.	Fill tank with clean, fresh gasoline. Fuel may not last over thirty days unless a fuel stabilizer is used.
	Blocked fuel line.	Clean fuel line.
	Choke not in ON position	Move switch to ON position
	Faulty spark plug.	Clean, adjust gap or replace.
	Key not in switch on engine.	Insert key.
	Spark plug wire disconnected.	Connect spark plug wire.
	Primer button not depressed.	Refer to the engine manual packed with your unit.
	Fuel shut-off valve closed (if so equipped).	Open fuel shut-off valve.
Engine runs erratic	Unit running on CHOKE.	Move choke lever to OFF position.
	Blocked fuel line or stale fuel.	Clean fuel line; fill tank with clean fresh gasoline. Fuel may not last over thirty days unless a fuel stabilizer is used.
	Water or dirt in fuel system.	Drain fuel tank. Refill with fresh fuel.
	Carburetor out of adjustment.	Refer to the engine manual packed with your unit or have carburetor adjusted by an authorized service dealer.
Loss of power	Spark plug wire loose.	Connect and tighten spark plug wire.
	Gas cap vent hole plugged.	Remove ice and snow from cap. Be certain vent hole is clear.
	Exhaust port plugged.	Clean-see Maintenance section of engine manual.
Engine overheats	Carburetor not adjusted properly.	Refer to the engine manual packed with your unit or have carburetor adjusted by an authorized service dealer.
	Incorrect fuel mixture.	Drain fuel tank. Refill with proper fuel mixture.
Excessive vibration	Loose parts or damaged auger.	Stop engine immediately and disconnect spark plug wire. Tighten all bolts and nuts. Make all necessary repairs. If vibration continues, have unit serviced by an authorized service dealer.
Unit fails to propel itself	Incorrect adjustment of drive cable.	Adjust drive cable. Refer to Adjustment section of this manual.
	Drive belt loose or damaged.	Replace drive belt. Refer to Belt Replacement on page 12.
Unit fails to discharge snow	Discharge chute clogged.	Stop engine immediately and disconnect spark plug wire. Clean discharge chute and inside of auger housing.
	Foreign object lodged in auger.	Stop engine immediately and disconnect spark plug wire. Remove object from auger.
	Incorrect adjustment of drive cable.	Adjust drive cable. Refer to Adjustment section of this manual.
	Drive belt loose or damaged.	Replace drive belt. Refer to Belt Replacement on page 12.
	Shear bolt(s) sheared	Replace shear bolt(s)

NOTE: *For repairs beyond the minor adjustments listed above, contact your nearest authorized service dealer or call 1-800-800-7310 for the Customer Support Center. Refer to separate engine manual packed with your snow thrower for more engine related information.*

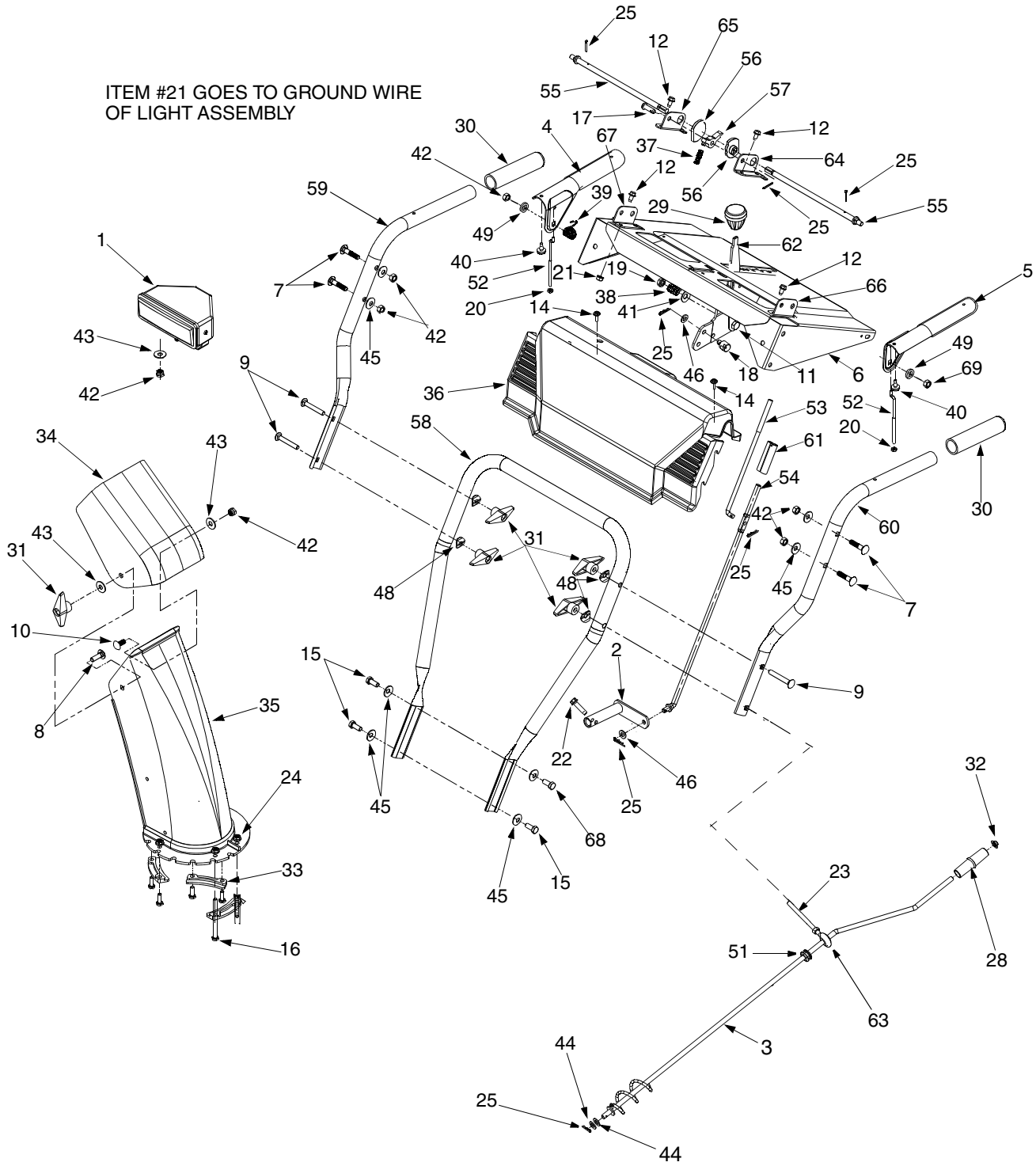
SECTION 10: PARTS LIST FOR MODEL 640



REF. NO.	PART NO.	DESCRIPTION
1	618-0123	RH Reducer Housing
2	618-0124	LH Reducer Housing
3	710-0642	Hex Screw 1/4-20 x .75
4	711-0908	Spiral Axle 24"
	711-0909	Spiral Axle 26"
	711-0910	Spiral Axle 28"
5	714-0161	Key
6	715-0143	Pin-Spiral
7	717-0528	Worm Gear, 20T
8	717-0526	Worm Shaft
9	718-0186	Thrust Collar

REF. NO.	PART NO.	DESCRIPTION
10	721-0325	Grease Plug
11	721-0327	Grease Seal
12	736-0351	Flat Washer .76 x 1.5 x .030
13	736-0369	Flat Washer .508 x 1.0 x .020
14	736-0445	Flat Washer .76 x 1.5 x .060
15	741-0662	Flange Bearing .75 x 1.0 x .59
16	741-0663	Flange Bearing .75 x 1.0 x .925
17	618-0120A	Ass'y. Complete 24"
	618-0121A	Ass'y. Complete 26"
	618-0122A	Ass'y. Complete 28"

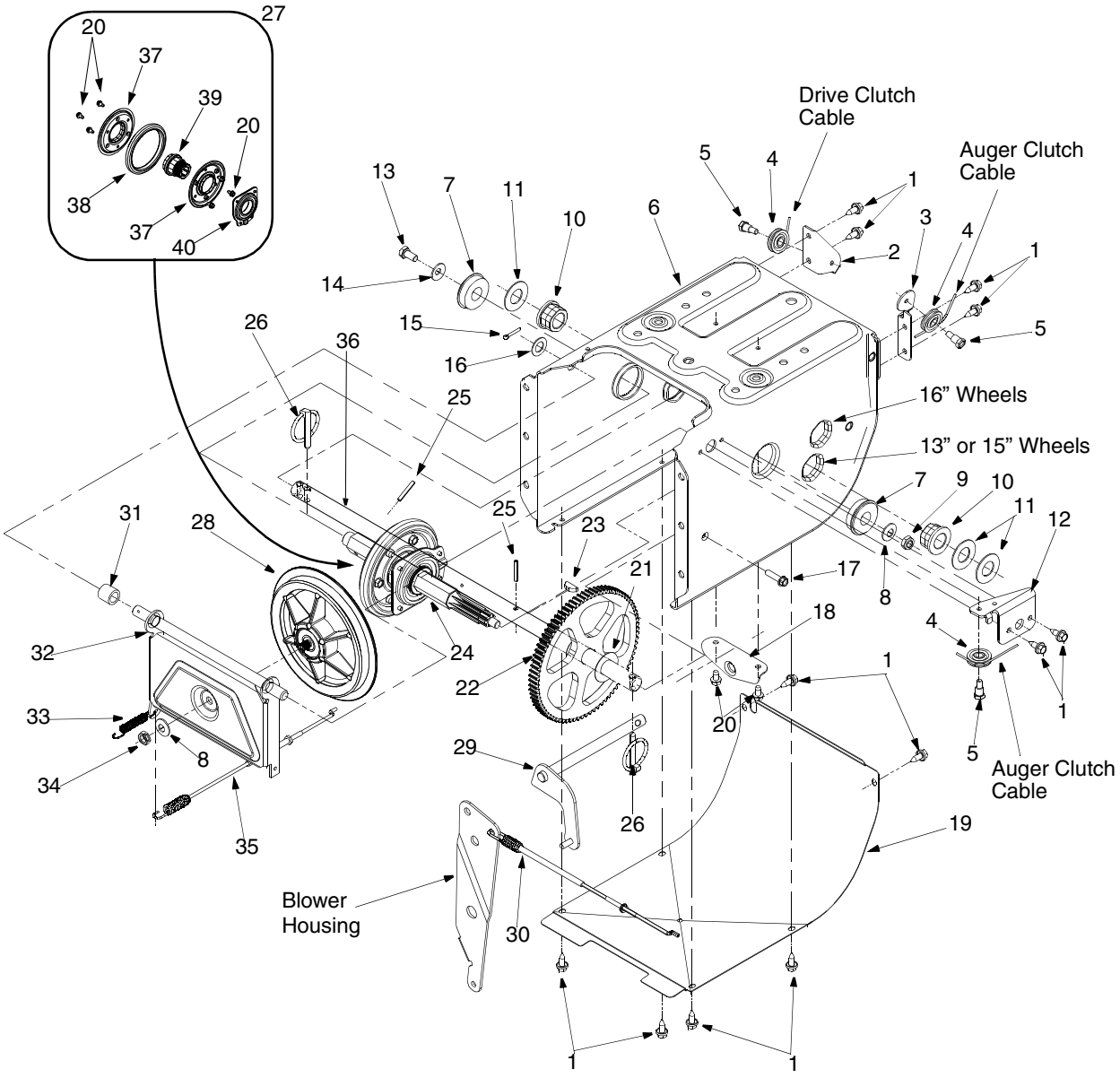
Model 640



Model 640

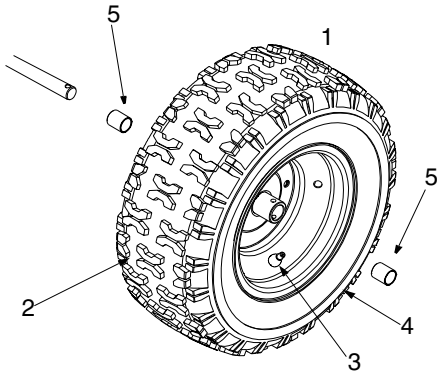
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	625-0007	Light Ass'y, Top Mount	36	731-1393	Handle Panel
2	684-0008A	Shift Arm Ass'y.	37	732-0145	Compression Spring
3	705-5204A	Chute Crank Ass'y.	38	732-0193	Compression Spring
4	684-0036	Handle Ass'y - Engagement R.H.	39	732-0746	Torsion Spring
5	684-0037	Handle Ass'y - Engagement l.H.	40	735-0199A	Bumper, Rubber
6	684-0103	Handle Panel Ass'y	41	736-0105	Bell Washer .401 x .870
7	710-0458	Carriage Bolt 5/16-18 x 1.75"	42	712-3068	Hex Nut 5/16-18
8	710-0276	Carriage Screw 5/16-18 x 1.0"	43	736-0159	Washer .349 ID x .879 OD
9	710-0449	Carriage Screw 5/16-18 x 2.25"	44	736-0185	Flat Washer .375 ID x .738 OD
10	710-0451	Carriage Bolt 5/16-18 x .75"	45	736-0119	Bell Washer .340 ID x .872 OD
11	710-0459A	Hex Head Screw 3/8-24 x 1.5"	46	736-0275	Flat Washer .344 ID x .688 OD
12	710-0599	Hex Washer Screw 1/4-20 x .50"	48	736-0451	Saddle Washer .320 ID x .93 OD
14	710-1003	Hex Washer Screw #10-16 x .625"	49	736-0509	Washer, Spec
15	710-1880	Hex Cap Screw 5/16-18	51	735-0234	Rubber Grommet
16	710-3015	Hex Cap Screw 1/4-20 x .75"	52	746-0778	"Z" Fitting
17	711-0653	Clevis Pin	53	747-0620A	Upper Shift Rod
18	711-0677	Ferrule	54	747-0621	Lower Shift Rod
19	712-0116	Jam Nut 3/8-24	55	747-0877	Rod, Cam
20	712-0121	Nut #10-24	56	748-0362	Cam Handle
21	712-0271	Hex Nut 1/4-20	57	748-0363	Pawl, Handle Lock
22	710-0788	Hex Washer Screw 1/4-20 x 1.0	58	749-0951	Lower Handle
23	712-3010	Hex Nut 5/16-18	59	749-0952A	Upper Handle RH
24	712-3027	Flange Lock Nut 1/4-20	60	749-0953A	Upper Handle LH
25	714-0507	Cotter Pin	61	750-0963	Clutch Rod Connector
28	720-0201A	Chute Crank Knob	62	784-5619A	Shift Handle
29	720-0232	Knob, Shift	63	747-0697	Eyebolt Chute Crank
30	720-0274	Grip	64	784-5679	Handle Support Bracket LH
31	720-0284	Wing Nut	65	784-5680	Handle Support Bracket RH
32	726-0100	Push Cap	66	784-5681	Handle Support Bracket LH
33	731-0851A	Chute Flange Keeper	67	784-5682	Handle Support Bracket RH
34	731-0921	Upper Chute	68	710-0643	Hex Bolt 5/16-18 x 1.0"
35	731-1300A	Lower Chute	69	712-0429	Lock Nut

Model 640


Drive Clutch Cable
Auger Clutch Cable
16" Wheels
13" or 15" Wheels
Auger Clutch Cable
Blower Housing

Model 640

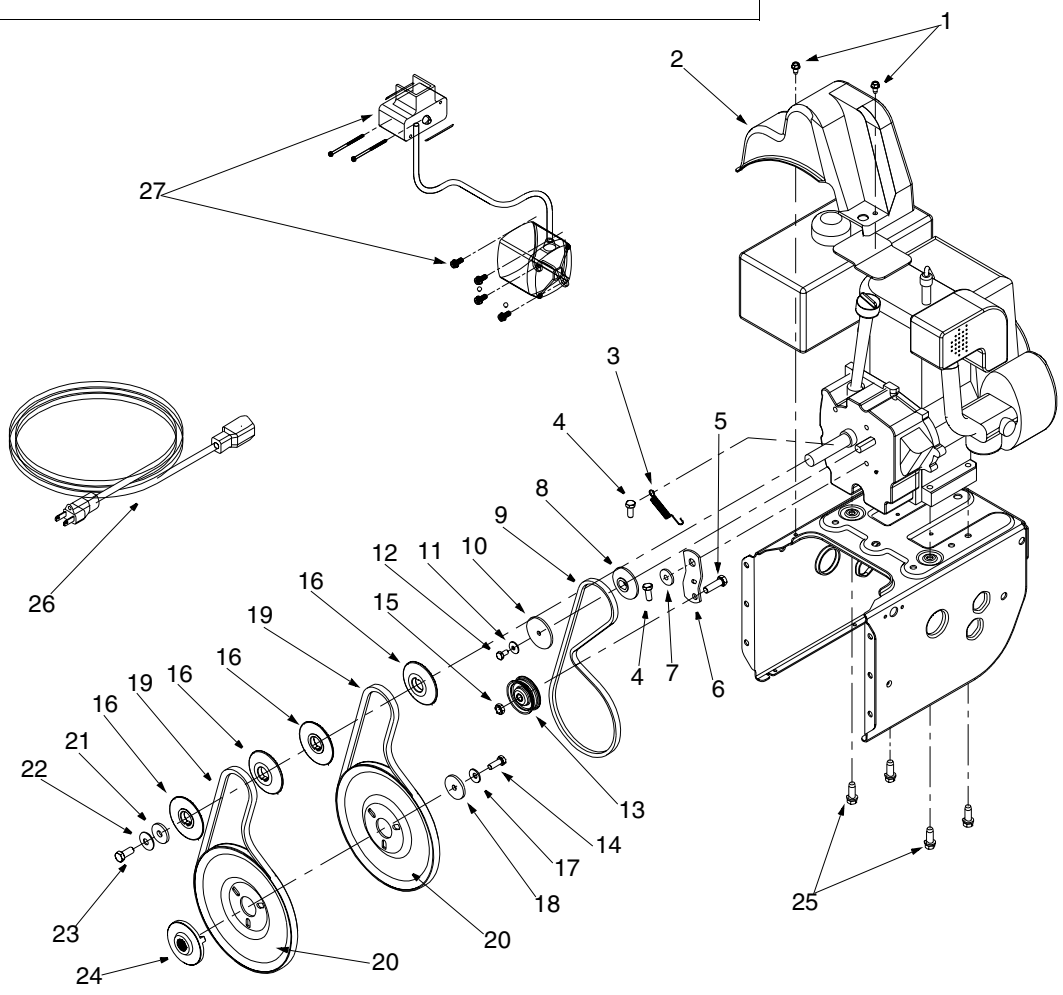
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	710-1652	Hex Screw	22	717-1445	Gear
2	784-5688	Drive Cable Guide Bracket	23	714-0126	Key
3	784-5687A	Auger Clutch Cable Bracket	24	717-1444	7-Tooth Shaft
4	756-0625	Roller Cable	25	715-0249	Roll Pin
5	738-0924	Hex Screw 1/4-28	26	714-0143	Klik Pin
6	684-0030	Frame Assembly	27	684-0042B	Friction Wheel Assembly
7	741-0563	Ball Bearing	28	656-0012A	Friction Disc Wheel
8	736-0105	Bell Washer	29	684-0013B	Wheel Shift Rod Assembly
9	712-0116	Lock Jam Nut	30	746-0897	Drive Cable
10	741-0598	Hex Flange Bearing	31	748-0190	Spacer
11	736-0188	Flat Washer	32	684-0021	Friction Wheel Bracket Assembly
12	784-5689A	Front Support Guide Bracket	33	732-0264	Extension Spring
13	710-0538	Lock Hex Screw	34	712-0711	Jam Nut 3/8-24
14	736-0242	Bell Washer .340 ID x .872 OD	35	746-0898	Drive Cable
15	714-0474	Cotter Pin	36	738-0869	Axle 13” Wheels
16	736-0160	Flat Washer .536 ID x .930 OD		738-0830	Axle 16” Wheels
17	710-0788	Hex Washer Screw 1/4-20	37	784-5617A	Friction Plate
18	784-5590	Frame Shift Bracket	38	735-0243B	Friction Wheel Rubber
19	784-5638	Frame Cover	39	718-0301A	Friction Wheel Hub
20	710-1652	Hex Washer TT Screw 1/4-20	40	618-0063	Friction Wheel Bearing
21	736-0351	Flat Washer .760 ID x .50 OD			



WHEEL ASSEMBLIES						
MODEL NUMBER	SIZE	REF. NO. 1 WHEEL ASS’Y COMPLETE	REF. NO. 2 TIRE ONLY	REF. NO. 3 AIR VALVE	REF. NO. 4 RIM ONLY	REF. NO. 5 SLEEVE BEARING (2)
31AE600E	13 x 5	734-1714	734-1527	734-0255	734-1713	741-0401
31AE610E	13 x 5	734-1714	734-1527	734-0255	734-1713	741-0401
31AE640F	16.5 x 4.8	734-1709	734-1530	734-0255	734-1708	741-0401
31AE660G	16 x 6.5	734-1712	734-1525	734-0255	734-1711	741-0401
31AE6C0F	16.5 x 4.8	734-1709	734-1530	734-0255	734-1708	741-0401

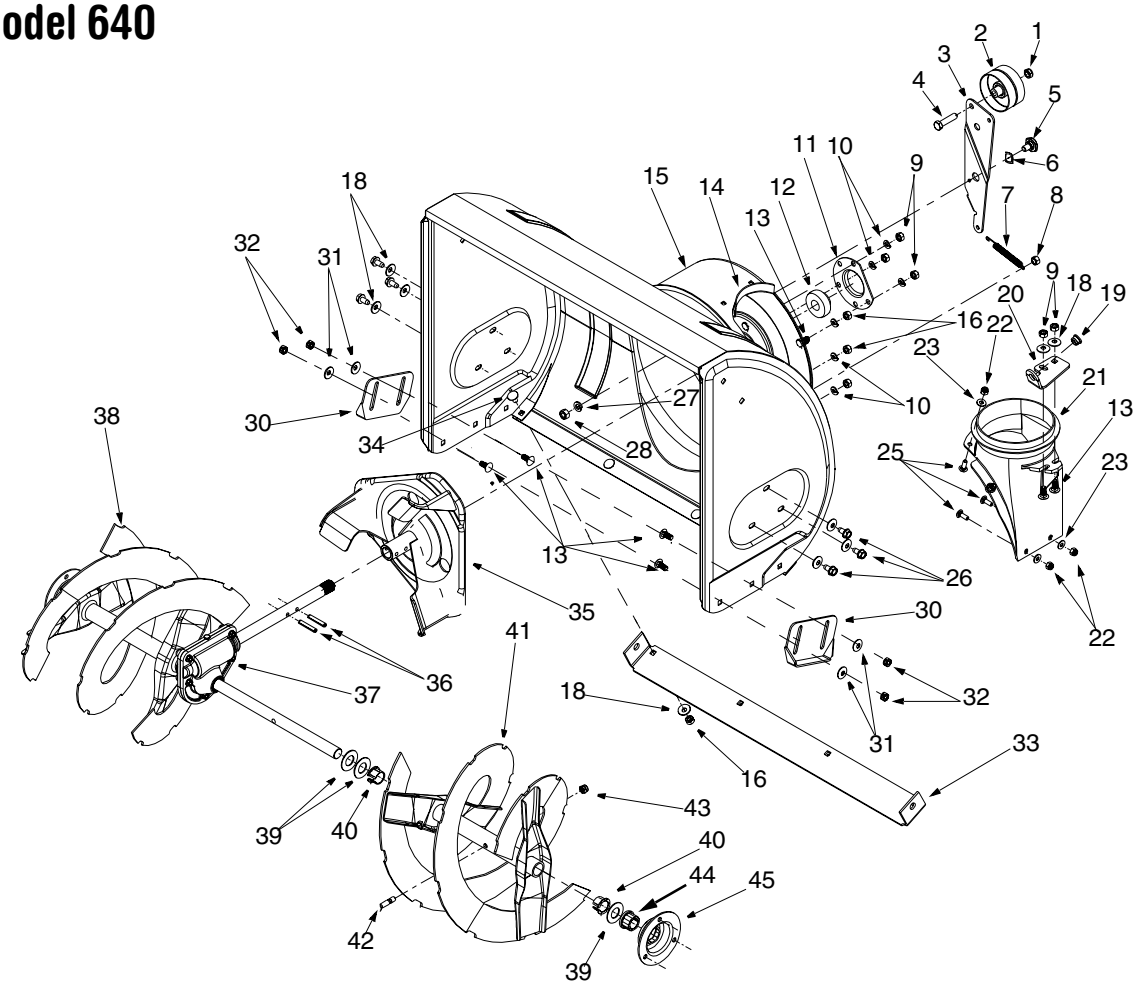
Model 640

IMPORTANT: For a proper working machine, use Factory Approved Parts.
V-BELTS are specially designed to engage and disengage safely. A substitute (non OEM) V-Belt can be dangerous by not disengaging completely.



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	710-1652	Hex Washer Screw 1/4-20 x .625	15	712-0181	Lock Jam Nut 3/8-16
2	731-1324	Belt Cover	16	756-0569	Pulley Half
3	732-0710	Extension Spring	17	736-0242	Bell Washer
4	710-0627	Hex Screw 5/16-24 x .75	18	736-0505	Flat Washer
5	710-3005	Hex Cap Screw 3/8-16 x 1.25	19	754-0430A	Belt
6	05896A	Drive Clutch Idler Bracket	20	756-0967	Auger Pulley
7	748-0234	Shoulder Spacer	21	736-0247	Flat Washer 3/8 x 1.25 OD
8	756-0987	Pulley Half	22	736-0331	Bell Washer
9	754-0346	V-Belt	23	710-0696	Hex Cap Screw 3/8-24
10	756-0986	Pulley Half	24	748-0360	Adapter Pulley
11	736-0270	Bell Washer	25	710-0654A	Hex Screw 3/8-16 x 1.0
12	710-0230	Hex Cap Screw 1/4-28 x .50	26	629-0071	Extension Cord
13	756-0313	Flat Idler	27	OEM-390-987	Electric Start
14	710-1245A	Lock Hex Cap Screw 5/16-24			

Model 640



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	712-0116	Lock Jam Nut 3/8-24	27	736-0169	Lock Washer 3/8
2	756-0178	Flat Idler	28	712-0798	Hex Nut 3/8-16
3	784-5632A	Auger Idler Arm	30	784-5580	Snow Shoe
4	710-0459A	Hex Cap Screw 3/8-24 x 1.50	31	736-0242	Bell Washer
5	738-0281	Shoulder Screw	32	712-3010	Hex Nut 5/16-18
6	736-0174	Wave Washer	33	784-5581A	24” Shave Plate
7	732-0611	Extension Spring		784-5579A	26” Shave Plate
8	712-3068	Hex Nut 5/16-18		784-5582A	28” Shave Plate
9	712-3010	Hex Nut 5/16-18	34	710-0260	Carriage Bolt 5/16-18 x .62
10	736-0119	Lock Washer 5/16	35	684-0065	Impeller Assembly
11	05931	Housing	36	715-0114	Pin
12	741-0309	Ball Bearing	37	618-0120A	24” Gear Assembly
13	710-0451	Carriage Bolt 5/16-18 x .75		618-0121A	26” Gear Assembly
14	705-5226	Reinforcement Chute		618-0122A	28” Gear Assembly
15	684-0039C	24” Housing Assembly	38	605-5188A	Spiral 24” RH
	684-0040C	26” Housing Assembly		605-5192A	Spiral 26” RH
	684-0041C	28” Housing Assembly		605-5196A	Spiral 28” RH
16	712-3010	Hex Nut 5/16-18	39	736-0188	Flat Washer
18	736-0242	Bell Washer	40	741-0493A	Flange Bushing
19	741-0475	Bushing	41	605-5189A	Spiral 24” LH
20	784-5647	Chute Crank Bracket		605-5193A	Spiral 26” LH
21	731-1379C	Chute Adapter		605-5197A	Spiral 28” LH
22	712-0324	Hex Lock Nut 1/4-20	42	710-0890A	Shear Bolt 5/16-18 x 1.5
23	736-0463	Flat Washer	43	712-0429	Lock Nut 5/16-18
25	710-0703	Carriage Screw 1/4-20 x .75	44	741-0245	Hex Flange Bearing
26	710-0604A	Hex Washer TT Screw 5/16-18	45	784-5618	Bearing Housing

YOUR NOTES

Date	Comment

YOUR NOTES

Date	Comment

MANUFACTURER'S LIMITED WARRANTY

The limited warranty set forth below is given by MTD PRODUCTS INC ("MTD") with respect to new merchandise purchased and used in the United States, its possessions and territories.

MTD warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster. Damage resulting from the installation or use of any accessory or attachment not approved by MTD Products Inc. for use with the product(s) covered by this manual will void your warranty as to any resulting damages.

Normal wear parts or components thereof are subject to separate terms as follows: All normal wear part or component failures will be covered on the product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear part failures will be covered ONLY IF caused by defects in material or workmanship of OTHER component parts. Normal wear parts and components include, but are not limited to, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires. Batteries are covered by a 90-day limited replacement warranty.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE THROUGH YOUR LOCAL AUTHORIZED SERVICE DEALER. To locate the dealer in your area, please check for a listing in the Yellow Pages or contact the Customer Service Department of MTD PRODUCTS INC by calling 1-800-800-7310 or writing to P.O. Box 368022, Cleveland, Ohio 44136-9722.

This limited warranty does not provide coverage in the following cases:

a. The engine or component parts thereof. These items carry a separate manufacturer's warranty. Please refer to the applicable manufacturer's warranty on these items.
b. Hydraulic pumps, valves and cylinders have a separate one year warranty.
c. Routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments; and normal deterioration of the exterior finish due to use or exposure.
d. MTD does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD's authorized channels of export distribution.

No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product shall bind MTD. During the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

The provisions as set forth in this Warranty provide the sole and exclusive remedy arising from the sales. MTD shall not be liable for incidental or consequential loss or damages including, without limitation, expenses incurred for substitute or replacement lawn care services, for transportation or for related expenses, or for rental expenses to temporarily replace a warranted product. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this Warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser, original lessee or the person for whom it was purchased as a gift.

How State Law Relates to this Warranty: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.